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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,560	03/26/2001	Donald J. Williams	3174-000009	7771

27572 7590 08/22/2002

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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,560

Applicant(s)

WILLIAMS ET AL. *W*

Examiner

Dang D Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 10-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-9 in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 10-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups II and III, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not show specifically how "said rotor tends to rotate relative to said stator to a rotational position that maximizes the inductance of an energized winding" and exactly how "a drive circuit that energizes said winding wire around said stator segment assemblies

based on said rotational position of said rotor" works. It seems that the claims are directed to the structure of the stator in Figures 3, 4A, 4B and 7A-8C.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4, and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (U. S. Pat. No. 5,929,590) in view of Muller (U. S. Pat. No. 4,698,542) and Yamazaki et al. (U. S. Pat. No. 6,127,753).

Regarding claim 1, Tang shows a machine comprising a switched reluctance motor that includes a shaft wherein said switched reluctance fan motor includes a stator, a rotor that is connected to said shaft and that defines a plurality of rotor poles, wherein said rotor tends to rotate relative to said stator to a rotational position that maximizes the inductance of an energized winding (columns 1 and 2), and a drive circuit (Figure 3) that energizes said winding wire around said stator segment assemblies based on said rotational position of said rotor.

Tang does not show a fan and a shaft connected to said fan, wherein said switched reluctance fan motor includes a stator including a plurality of circumferentially-spaced stator segment assemblies that include a stator segment core and winding wire wound around said stator segment core.

Muller shows a fan (23) and a shaft (12) connected to said fan for the purpose of making a fan motor.

In addition, Yamazaki et al. show the switched reluctance fan motor including a stator (Figure 1) including a plurality of circumferentially-spaced stator segment assemblies that include a stator segment core and winding wire wound around said stator segment core for the purpose of decreasing size.

Since Tang, Muller and Yamazaki et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect a shaft to a fan and to include a plurality of circumferentially-spaced stator segment assemblies that include a stator segment core and winding wire wound around said stator segment core as respectively taught by Muller and Yamazaki et al. for the purposes discussed above.

Regarding claim 2, it is noted that Muller also shows a fan housing (11c, Figures 2-4), wherein said fan housing includes an inlet (top) and an outlet (bottom), wherein said switched reluctance fan motor is mounted in said fan housing and wherein said fan is an axial fan.

Regarding claim 4, it is noted that Yamazaki et al. also show said stator segment core including stator plates with a radially outer rim section (Figure 1) and a tooth section that extends radially inwardly from a center portion of said radially outer rim section.

Regarding claim 6, it is noted that Yamazaki et al. also show projections (Figure 1) extending from opposite sides of a radially inner end of said tooth section.

Regarding claim 7, it is noted that Yamazaki et al. also show first and second end caps (Figure 1, 31) connected to opposite axial ends of said stator segment core; and first and second end cap retainer sections that extend along said projections and that connect said first and second end caps, wherein said first and second end caps and said first and second end cap retainer sections reduce movement of said winding wire during use.

Regarding claim 8, it is noted that Yamazaki et al. also show said stator plates of said stator segment core including radial and lateral slits and first and second central portions that are deformed using a punch to hold said stack of stator plates together (Figure 2).

Regarding claim 9, it is noted that Tang also shows said drive circuit sensing rotor position using sensorless techniques.

7. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (U. S. Pat. No. 5,929,590) in view of Muller (U. S. Pat. No. 4,698,542) and Yamazaki et al. (U. S. Pat. No. 6,049,153) as applied to claim 1 above, and further in view of Cooper (U. S. Pat. No. 5,194,775).

Regarding claim 3, the machine of Tang modified by Muller and Yamazaki et al. includes all of the limitations of the claimed invention except for said fan being a squirrel cage fan.

Cooper shows the motor being a squirrel cage motor (Figure 1, rotor 22) for the purpose of making a squirrel cage rotor.

Since Tang, Muller, Yamazaki et al. and Cooper are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the motor a squirrel cage motor as taught by Cooper for the purpose discussed above.

8. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (U. S. Pat. No. 5,929,590) in view of Muller (U. S. Pat. No. 4,698,542) and Yamazaki et al. (U. S. Pat. No. 6,049,153) as applied to claim 4 above, and further in view of Crawford et al. (U. S. Pat. No. 4,922,165).

Regarding claim 5, the machine of Tang modified by Muller and Yamazaki et al. includes all of the limitations of the claimed invention except for an insulation layer located between said winding wire and said stator segment core.

Crawford et al. show an insulation layer (37, 39) located between said winding wire and said stator segment core for the purpose of insulating the stator slots.

Since Tang, Muller, Yamazaki et al. and Crawford et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include an insulation layer between said winding wire

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and said stator segment core as taught by Crawford et al. for the purpose discussed above.

Information on How to Contact USPTO

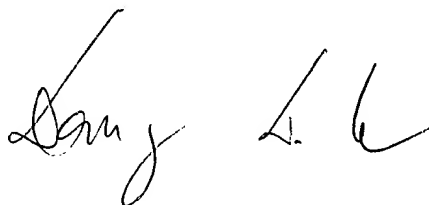
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
August 19, 2002

DL

Handwritten signature of Dang D Le in cursive script.